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AUTHOR DuBose, Rebecca F.
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Assessment of Behavioral Repertoires of Severely Impaired Persons

Rebecca F. DuBose, Ph.D.

George Peabody College for Teachers

Nashville, Tennessee

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ABSTRACT

The difficulties in the assessment of severely handicapped children are described. Competencies for examiners and desirable test characteristics are listed. A table presents descriptive information on tests most frequently used in measuring the behavioral repertoires of severely handicapped children. The Developmental Activities Screening Instrument, a recently published nonverbal test designed specifically for severely handicapped children, was noted.

Assessment of Behavioral Repertoires of Severely Impaired Persons

In the United States, educational services for severely handicapped children are no longer an option, services were mandated through Public Law 94-142 in 1975. Prior to 1975, screening and assessment of severely handicapped persons were completed for the purpose of classification and placement. With the passage of P.L. 94-142, for more is needed than a nonfunctional label that notes primarily one's impairment. Educational agents must know what to teach each child, how to instruct each child and how to measure behavioral changes. Psychologists and diagnosticians play a major role in formulating these educational plans.

Characteristics of Severely Handicapped Children

Sontag, Burke, and York (1974) described the severely and profoundly handicapped as:

> "Those who are not toilet trained; aggress toward others; do not attend to even the most pronounced social stimuli; self-mutilate; ruminate; self-stimulate; do not walk, speak, hear or see; manifest durable and intense temper tantrums; are not under even the rudimentary forms of verbal control; do not imitate; manifest minimally controlled seizures; and/or have extremely brittle medical existences" (p. 21).

Psychologists and diagnosticians agree that the very limited response repertoires of severely handicapped persons make valid assessment exceedingly difficult. The likelihood of multiple impairments greatly limits how an examiner can provide input and how the client can respond. Frequently, examiners are told of only the major handi-

capping condition that must be considered when testing the client, yet discover later, that numerous other impairments are also influencing performance. Unfortunately, few examiners are trained to be alert to additional handicaps that are likely to be present when major problems have been diagnosed.

Examiner Competencies

A license to test provides little assurance that the examiner is competent to assess severely handicapped persons. Few experiences with this population were provided examiners during their formal training. From observations of examiners and diagnosticians who are successful with this population, certain skills are noted:

1. Knowledge of the precise sequences by which children acquire skills;
2. Knowledge of the impact certain impairments have on the development of skills;
3. Ability to determine the most appropriate procedure for presenting the tasks to the particular child;
4. Ability to establish a satisfactory communication system with the child;
5. Ability to select the most appropriate tests/tasks, administer them or adapt them as needed.
6. Ability to select the most appropriate environments for testing;
7. Ability to time testing periods so as to evoke maximum responses;

8. Ability to manipulate testing conditions to enhance correct responses;
9. Ability to translate findings into functional program plans;
10. Ability to present data in a positive manner.

Assessment Measures

Prior to the 1970's, test data on severely handicapped persons were gathered for the purpose of classification. Interview scales, administered to primary caregivers, were a major source of documentation. Tests available were not developed with severely impaired persons in mind, thus most are not appropriate or valid measures. Many instruments rely on highly functional auditory and visual channels and thus penalized children with sensory deficits (DuBose, 1976). Instruments requiring substantial language skills produce depressed scores of mental abilities, yet these abilities are not necessarily the same (Doll, 1966; Stutsman, 1931). Kiernan and DuBose (1974) identified other problems inherent in tests frequently administered to multiply handicapped children: (a) items lacked optimal stimulus value and were not sufficiently motivating; (b) items were time-bound and not recognized by today's children; (c) tests were not designed to be administered to children with multiple handicaps. Kent (1950) noted the constraints of tests requiring speed, a very difficult concept to convey to handicapped children. Perhaps the most significant shortcoming of tests available has been the limited data that can be readily translated into appropriate goals, objectives and teaching

strategies.

DuBose, Langley and Stagg (1977) noted six characteristics desirable in instruments used in assessing severely handicapped children:

1. They should be easily obtained and simply scored.
2. They should possess adequate validity and reliability.
3. The items should be primarily manipulative in nature.
4. Scoring should be minimally dependent upon the child's speed of performance.
5. The items should be adaptable across all handicapping conditions.
6. The instruments should yield data immediately transferable into sequentially planned developmental activities for educational programming. (p. 7)

P.L. 94-142 requires that multiple measures be used in the assessment of handicapped children. Measures most frequently included are: mental, adaptive, communicative or language, motor, and self-care tools.

The usefulness of tests of mental abilities when given to individuals performing on an infantile level has been questioned (Goffeney, Henderson, & Butler, 1971; VanderVeer & Schweid, 1974). DuBose (1977) administered infant intelligence scales to 28 multiply handicapped children found early scores to reliably predict later scores (younger group, .69, $p < .001$; older group .83, $p < .001$). Diebold, Curtis and DuBose (1978) found significant correlations between a set of systematic observational measures and a set of standardized developmental scales when given to deaf-blind children. The authors offered further

support for both kinds of measurement procedures when evaluating deaf-blind subjects.

A major consideration of mental measures are the adaptations frequently necessary when assessing severely handicapped children. These adjustments must be duly noted and are likely to decrease the validity of the measure. For this reason, specific scores alone are of limited value. Far more important are the performances that indicate the presence or absence of sensorimotor schemas and the general developmental data provided by test results.

Measures of receptive and expressive language frequently begin assessment at a level that is too high to be useful in the assessment of severely handicapped persons. To determine how nonverbal children communicate it is necessary to observe their interactions with people and objects and note facial and body gestures indicative of various levels of sensorimotor behavior and of early states of social interactions. Developmental data emerging from researchers investigating cognitive and social development in infants has been most valuable to those assessing and programming for early language learning (DuBose, 1978; McLean & Snyder, 1977).

Aberrant motor development is likely to be present in severely handicapped children. Tools that assess reflexes, basic postural reactions and early motoric milestones are valuable aids in the assessment of motor performance. Orientation and mobility specialists are extending their services to multiply handicapped youngsters and are developing assessment tools and instructional programs sorely needed.

Social and self-care skills are major goals for severely handi-

capped persons and must be assessed and addressed by team members. Interview and observational scales predominate in this area, however data gathered on criterion-referenced measures are definitely preferred by educators.

Although by no means complete or exemplary, the tests noted in Table 1 have been found to be useful with severely and multiply handicapped children.

Insert Table 1 About Here

The Developmental Activities Screening Inventory

In an attempt to provide an assessment tool that could be used with severely handicapped children, DuBose and Langley (1977) developed the Developmental Activities Screening Inventory (DASI). This nonverbal test is an informal screening measure appropriate for children functioning between 6 and 60 months. Adaptations for administering the DASI to visually impaired children are included. The 55 items cover a variety of skills, such as fine motor manipulations, cause-effect and mean-end relationships, associations, number concepts, size discriminations, and seriation, skills frequently included in tests of early cognitive development.

The DASI was designed to be administered by classroom teachers with a basic knowledge of child development and a minimum experience with testing procedures. To attend to the primary teacher need, that of program implementation, the authors have included suggestions for teaching the skills assessed on the DASI. From the failed items, a

very simple individualized program can be formulated and begun while the teacher awaits the more extensive assessment that can be provided by a diagnostic team.

Investigations of the relationship between scores by the DASI and other mental measures (Infant Intelligence Scale and Merrill-Palmer Scale of Mental Tests) indicate the measures are highly correlated (.91).

The DASI's highly functional assessment procedures fill pressing needs for examiners and teachers of severely handicapped children. It is a test that can be administered informally; it does not require language skills; provides a very simple procedure for determining the developmental level of a child, and it offers suggestions for where and how to begin to train skills not currently observed in the child's repertoire.

Summary

Psychologists and diagnosticians have not been adequately trained to assess severely handicapped children. A list of examiner competencies was presented to guide the training of future assessment personnel. The problems inherent in currently available measures were noted. A table presented detailed information on instruments most commonly used in the assessment of severely impaired children. A new assessment tool, the Developmental Activities Screening Inventory, designed specifically for this population was described.

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Table 1
Selected Measures for Severely Handicapped Children

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Selected Measures for Severely Handicapped Children

Test	Age	Purpose	Skills Assessed
Developmental Activities Screening Inventory Teaching Resources 100 Boylston Street Boston, MA 02116	6-60 months	Screening	A teacher-administered screening instrument to determine general cognitive adaptive functioning levels, accompanied by developmental activities suggestions.
Callier Azusa Callier Center for Communication Disorders 1966 Inwood Road Dallas, TX 75235	0-84 months	Screening	Provides for assessment of socialization, daily living skills, motor development, perceptual abilities and language development. An observation model is used.
Infant Intelligence Scale Psychological Corp. 757 3rd Avenue New York, NY 10017	0-30 months	Cognitive Development	Contains manipulative tasks for determining sensory motor development, including imitation, problem solving, and a few language items.
Bayley Scales of Mental Development Psychological Corp. 757 3rd Avenue New York, NY 10017	0-30 months	Cognitive Development	Similar to Cattell. It includes separate motor and social scales in addition to a mental scale.
Ordinal Scales of Psychological Development Uzgiris, I. C., & Hunt, J. McV. Assessment in infancy: Ordinal scales of psychological development. Urbana, IL: University of Illinois Press, 1975.	Birth-24 months	Cognitive Development	Series of 6 ordinal scales, based on Piagetian observations of sensory-motor schemas. Concerned with the hierarchial interrelationship of achievements at different levels. Six scales include visual pursuit and permanence of objects, development of means for obtaining desired environmental events,

Test	Age Range	Purpose	Skills Assessed
Ordinal Scales (cont'd)			development of vocal and gestural imitation, development of schemas for relating to objects, development of operational causality, and construction of object relations in space.
Merrill-Palmer Scales of Mental Development Stoelting Co. 1350 S. Kostner Ave. Chicago, IL 60623	18-71 months	Cognitive Development	The scales assess not only the child's cognitive abilities, but expressive and receptive language and fine and gross motor skills. Comprised largely of performance items, some of which are timed. Provision is made for a child's refusal of an item.
McCarthy Scales of Children's Abilities The Psychological Corp, 757 3rd Avenue New York, NY 10017	30-102 months	Cognitive Development	An instrument to measure general cognitive functioning, as well as child's strengths and weaknesses in verbal and perceptual performances. Quantitative, memory, motor development, and laterality skills also are examined.
Wechsler Preschool and Primary Scale of Intelligence (WPPSI) Psychological Corporation 757 Third Avenue New York, NY 10017	48-78 months	Cognitive Development	The verbal subtests usually given to blind children include: Information, Comprehension, Similarities, Arithmetic and Vocabulary. The supplementary subtest of sentences is also useful with this population.

Test	Age Range	Purpose	Skills Assessed
Nonverbal Indicators of Communicative Exchange R. F. DuBose Box 328 Peabody College Nashville, TN 37203	Birth-36 months	Nonverbal language & Social Development	A developmental scale of social interactions leading to symbolic language behavior.
Receptive Expressive Emergent Language Scale of Intelligence (REEL) Anhinga Press Route 2, Box 513 Tallahassee, Florida 32301	Birth-36 months	Language Development	Primarily an interview scale, the REEL assesses the child's comprehension and expression of early language skills. The scale rveals any differences that may exist between the infant's CA and his combined receptive-expressive age.
Developmental Sentence Analysis Lee, L. L. Developmental sentence analysis. Evanston, Ill.: Northwestern University Press, 1974	24-96 months	Language Development	Analyzes children's spontaneous speech samples into eight major syntactic categories to derive a sentence score comparable to normal language development.
Laura Lee's Developmental Sentence Types (See above)	Pre-syntactic formations	Language Development	Analyzes children's spontaneous speech into the early developing pre-syntactic structures based on single and two-word combinations, and elaborated constructions.

Test	Age Range	Domain	Skills Assessed
Sequenced Inventory of Communication Development University of Washington Press Seattle, WA 98105	0-48 months	Language Development	Receptive and Expressive scales permit examiner to assess the child in an informal play atmosphere.
Receptive Expressive Language Assessment for the Visually Impaired S. Raynor Ingham Intermediate School Dist. Mason, MI	Birth-72 months	Language Development	An adaptation of the REEL for preschool blind children.
Inner Language Scale Child Study Center Peabody College Box 328 Nashville, TN 37203	Birth-24 months	Language Development	The way in which a child responds to objects and environmental stimuli is assessed on this scale, based on Piagetian theory.

Test	Age Range	Domain	Skills Assessed
Environmental Pre-Language Battery Charles E. Merrill 1300 Alum Creek Drive/Box 508 Columbus, OH 43216	Early Communication Stages	Language Development	A series of diagnostic procedures for the nonverbal client. Assesses semantic and cognitive requirements for language through attention, gestures, imitation, play, comprehension and single words.
Environmental Language Inventory (See above)	one and two-word utterance level	Language Development	A diagnostic and treatment model that assesses early semantic-based grammar through imitation, conversation, and play. Provides extensive data on early experimental parent-based programs using the ELI design and adaptations to total communication, later language on classroom use.
Fokes Developmental Motor Scales In Stephens, Beth, Training the Developmentally Young, New York: John Day, 1974	Birth-84 months	Motor Development	Provides height, weight, and characteristic behaviors of children of each level assessed. Assesses skills of upper and lower extremities, such as locomotion, climbing, jumping, balance, reach, grasp, release, manipulation, throwing, writing, and perceptual-motor abilities.

Test	Age Range	Domain	Skills Assessed
Peabody Developmental Motor Scales Monograph #25 IMRID Publications Box 154 George Peabody College for Teachers Nashville, TN 37203	Birth-84 months Birth-72 months	Motor Development	An instrument for use in assessing gross and fine motor development. The scoring section allows the child credit for minimum success rather than a pass or failure. The scales are accompanied by developmental activities for each area assessed.
Peabody Mobility Scale % Randall K. Harley Box 36 Peabody College Nashville, TN 37203	48-167 months	Motor Development	Scales and intervention materials for multiply handicapped blind children in the areas of basic motor, sensory, conceptual and mobility skills.
Lakeland Village Adaptive Behavior Grid Lakeland Village Medical Lake, WA 99022	Birth-72 months	Social/Self-care	Allows the evaluator to derive developmental levels for areas such as eating, grooming, dressing, mobility, recreation, socialization and behavior control, all of which are task analyzed.
Maxfield-Buchholz Scale of Social Maturity for Preschool Blind Children American Foundation for the Blind, Inc. 15 West 16th Street New York, NY 10011	Birth-72 months	Social/Self-care	Adaptation of the Vineland Social Maturity Scale for blind children. This scale of social development evaluates children in areas of general motor development, dressing, eating, locomotion, socialization, communication, and occupation.

Test	Age Range	Domain	Skills Assessed
Adaptive Behavior Inventory for Children The Psychological Corp. 757 Third Avenue New York, NY 10017	5-11 years	Adaptive Development	7 subscales, 24 items, including family role performance, peer-group role performance, student role performance.
Adaptive Behavior Scale 1329 Northup Way Bellevue, Washington 98005	3-69 years	Adaptive Development	2 parts, 24 subscales, including independent functioning, physical development, domestic activity, untrustworthy behavior.